

REMARKS

Applicants respectfully traverse and request reconsideration.

Applicants wish to thank the Examiner for the notice that claims 41-43 are allowed and that claims 6, 19 and 32 are objected to but would be allowable if written to include intervening claims. Applicants note that claim 43 is indicated to be allowed but is also rejected. Applicants have responded to the rejection below.

Claims 27-39 and 43 stand rejected under 35 U.S.C. §101 because the claim is allegedly not directed statutory subject matter as allegedly not producing a useful, concrete and tangible result. It is alleged that the process consists solely of manipulation of an abstract idea. Applicants respectfully note that the claims have been previously considered to be compliant with §101 in prior office actions and Applicants respectfully submit that prior evaluations were proper. Applicants also note that the rejection states that because the claims comprise the language a computer program product, that can also include carrier waves, the claims therefore are not statutory. Applicants have amended claims to clarify that the claims are not directed to carrier waves. Applicants also respectfully note that the claims are not directed solely to an abstract idea and generate useful results in that, among other things, the executable instructions cause a computer to produce a special value to a frame buffer and that obtains a value generated by performing shading operations using a plurality of ALU/memory pairs wherein the shading operations comprise both texture operations and color operations. Applicants respectfully request that the rejection be withdrawn.

Claims 1-5, 7-12, 14-18, 20-31 and 33-40 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over by Donham et al. in view of U.S. Patent No. 5,999,196 (Storm). This is a new ground of rejection. As to claim 1, the office action alleges that Donham

teaches a shading processing mechanism that comprises at least one ALU/memory pair operative to perform both texture operations and color operations.

For example, the office action cites a microblender 72, 73 and FIFO 74 as allegedly equating to the claimed ALU and/or memory pair. However, Donham utilizes a structure that requires two ALUs and the ALUs do not perform the texture operations as claimed. To the contrary, Donham requires a separate ALU and memory (see for example, 60 and FIFO 65) to perform the claimed texture operations and a different ALU and FIFO (72, 73 and 74) to perform color operations. As such, the Donham reference utilizes a different ALU/FIFO to perform texture operations and a separate and different ALU/FIFO to perform color operations. Moreover, these separate ALU operations are sequentially performed by separate ALUs in Donham (see for example, FIG. 2 of Donham). As such, Applicants' claims are in condition for allowance. In addition, the Donham reference requires independent FIFO 65 and 74 neither of which are accessible by other respective ALUs to carry out its operations. In contrast, as claimed, the ALU/memory pair utilizes a single ALU/memory to request texture information and/or memory that stores both received texture values fetched from, for example, a texture cache and color values and the ALU utilizes the memory to perform both texture operations and color operations. Other differences will be recognized by those of ordinary skill in the art.

In addition, the office action admits that Donham fails to teach or suggest, among other things, an ALU/memory pair operative to perform both texture operations and color operations wherein texture operations comprise at least issuing a texture request to a texture unit and/or writing received texture values to the memory. The Storm reference is alleged to teach this subject matter. Although the claims are allowable for the reasons noted above, Applicants will also address the Storm reference which does not teach what is alleged.

For example, it is alleged that the floating point blocks 152 and SRAMs 153 correspond to the claimed shading processing mechanism that performs shading operations that include both texture operations and color operations wherein texture operations comprise at least one of issuing a texture request to a texture unit or writing received texture values to the memory. The office action cites to column 12, lines 28-67, column 5, lines 45-54 and column 5, lines 3-21. However, Applicants respectfully submit that Storm does not teach what is alleged. The floating point blocks 152 and SRAMs 153 do not perform both texture operations and color operations as claimed wherein texture operations include issuing a texture request to a texture unit and writing received texture values to the memory that is part of the ALU/memory pair. This is because Storm uses a completely different structure from that claimed and in fact, teaches that different structure other than the blocks 156 and 153 must be used, namely the texture pixel processor 426. This is part of the draw engines 172. The draw engines 172 “performs texture calculations and controls the lookup of texels in a texture memory 430” (see column 16, lines 43-49). Storm also teaches that the draw engines and namely the texture pixel processor 426 produces a color to be merged into the pixel by the pixel processor 434. In fact, the Storm reference requires the use of primitive accumulation buffers 404 that are used to accumulate primitive data until a complete primitive has been received from the six floating point processor 152. (See column 15, lines 55-60). As such, the floating point processors do not perform the texture operations as claimed and there is no shading processing mechanism as claimed taught in either of the references or suggested thereby. Since the reference does not teach what is alleged, Applicants respectfully submit that the independent claims are in condition for allowance.

In addition, Applicants respectfully submit that the dependent claims also add additional novel and non-obvious subject matter.

Claims 14-18 and 26 are rejected on the same basis as claims 1-5 and 7-12 and as such, are also allowable at least for the relevant reasons noted above.

Claims 27-31 and 33-39 are also rejected on grounds similar to claims 1-5 and 7-12 and as such, are also allowable at least for the relevant reasons given above.

Claim 40 is also allowable at least for the reasons noted above.

Applicants respectfully submit that the claims are in condition for allowance and that a timely Notice of Allowance be issued in this case. The Examiner is invited to contact the below-listed attorney if the Examiner believes that a telephone conference will advance the prosecution of this application.

Respectfully submitted,

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